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ABSTRACT

In this discussion on differences between white and black students in academic achievement, it is pointed out that apparent differences in scholastic ability may actually be differences in ways of thinking and relating to schooling which arise more from cultural background than from innate cognitive ability. It is suggested that disparities that exist (or are measured by standardized tests) may be attributed in part to different ways of interpreting the spoken or written word. Focusing upon students' knowledge or beliefs about factors affecting their own cognitive activities, and reinforcing their ability to reflect on or monitor their own cognitive processes will strengthen academic performance. One skills training format that may be used to this end is a task analysis instructional sequence for teaching metacognitive skills for test taking. This approach can be used as an intellectual enrichment strategy. Such treatment sessions emphasize the necessity for students to independently plan, regulate, and monitor their reading/thinking activities, focusing on thoughts, goal setting, planning, assessment of ways to achieve goals, and checking to see whether the academic goal has been met. A five-page reference list concludes the document. (JD)

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The Implications of Metacognition as an Intellectual Enrichment Strategy to Increase the Success of Black Students on Standardized Assessment Measures

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Introduction

Reading is a fundamental skill for all students to have because it serves as the basis for acquisition of knowledge in all content areas (e.g., math, science, history, and English). It is important for teachers to ensure that their students acquire this skill, and all other skills, to the highest level of proficiency possible. Reading instruction begins as early as kindergarten where students are taught letter recognition and formation of sounds. This instruction and subsequent concepts presented, progress in complexity, intensity, and quantity. For reasons such as this, educators have a responsibility to ensure that students are grasping the various skills in reading that are presented to them.

Basic reading skills must be acquired in order for students to successfully participate in academic activities. Black students have often shown performance that differs considerably from that of white students on standardized measures. It is the teacher's responsibility to assist black students by assessing and developing their early reading skill levels in order to increase their performance on later criterion referenced and standardized tests. An early, quality foundation in reading will lead to success for the students in content areas such as math and science. The phrase, "Reading is fundamental" applies to all components of students' academic requirements.

Since standardized testing is used as a way to determine

such occurrences as whether students pass from one grade to the next, participate in an honors program, enroll in college preparatory courses, receive an academic scholarship or attend graduate and post graduate school, improving the performance of black students is a priority concern at the present time. An early enrichment program may help in identifying areas that teachers need to give attention to in the form of special instruction, supplementary activities, and remediation. Choices of enrichment instructional materials can be made effectively if a needs assessment has been done and a 'formal' plan of instruction has been developed. Early enrichment training of black students' metacognitive skills will increase their overall performance on the standardized intelligence, achievement, and aptitude tests which are used to make decisions such as those described above.

The Implications of Metacognition as an Intellectual Enrichment Strategy to Increase the Success of Black Students on Standardized Assessment Measures

The fact that black students and white students are different has been a topic addressed by many authors. It is a concern of teachers because in many locations there are a large number of black students enrolled in schools. This suggests that teachers need to be aware of the special characteristics of students who are black. It also indicates that there continues to be a need to improve education in general in our nation's schools. Jashick (1986), in an article which described the status of black students in colleges, gave information about each state's role toward that end. Due to social concerns, enrollment trends and pressure from minority group politicians, many states are evaluating and improving their programs for minority students. Regardless of the reasoning, improvements are needed and will greatly assist black students. The questions are appropriately raised: As states improve their concern for the education of minorities, what is the task of minority students? What is the task of educators and practitioners?

Black students may lack some of the cognitive skills of middle-class students, or their cognitive skills may not be as highly developed as those of middle-class white students. On the other hand, middle-class white students may lack some

of the cognitive skills of black students. What is emphasized is that these two groups are different, but their differences do not mean that the former is inferior to the latter (Johnson, 1973). It is the goal of schools and our education system to assist students in achieving their maximum potential possible -- academically and socially. In order to attain this goal, it is the responsibility of educators and all professionals concerned with the welfare of students to give more attention to the skills black, and other, students possess and strive to improve them. More focus needs to be placed on the positive aspects of students' differences and not the negative aspects. Such redirection and in some ways de-emphasis could produce far-reaching and favorable rewards.

Torrance (1976) developed an approach called the Creative Positive Strategy which served as a way to identify the strengths of culturally different students in order to facilitate their learning and to promote their success in careers. He stated that differences black students possess have are not necessarily deficits and that many of their differences may actually be good for all concerned (p. 10).

The 'creative positives' are a set of characteristics which help guide the search for the strengths of culturally different students, including black students. The following list of characteristics, according to Torrance (1976), occur to a high degree among culturally different students:

1. Ability to express feelings and emotions;

2. Ability to improvise with commonplace materials and objects;
3. Articulateness in role playing, sociodrama, and story telling;
4. Enjoyment of and ability in visual arts -- drawing, painting, sculpture, etc.;
5. Enjoyment of and ability in creative movement, dance, dramatics, etc.;
6. Enjoyment of and ability in music, rhythm, etc.;
7. Expressive speech;
8. Fluency and flexibility in figural media;
9. Enjoyment of and ability in group activities, problem-solving, etc.;
10. Responsiveness to the concrete;
11. Responsiveness to the kinesthetic;
12. Expressions of gestures, "body language", etc. and ability to interpret "body language";
13. Humor;
14. Richness in imagery in informal language;
15. Originality in ideas in problem-solving;
16. Problem centeredness or persistence in problem-solving;
17. Emotional responsiveness;
18. Quickness of warm up (p.14).

Torrance (1976) stated that students need to be provided with learning experiences in which they can manifest their strengths. He expounded upon his position by remarking that this idea is one which is possible to implement, but the work

must be done by people who seek to ensure that an equal chance for success is given to disadvantaged and culturally different students.

Research findings of the middle 1960's led to a view of low-socioeconomic status students' language as a deficient system, restricted in potential abstraction, a barrier to school success and underdeveloped (Granger, 1976). Before 1970, low socioeconomic status black students were thought to be linguistically deprived in comparison to middle socioeconomic status white students; since that time black students have been thought to be linguistically different. This change occurred because of classroom procedures and methodologies which have been employed (Granger, 1976). Educators have developed and utilized various techniques to assist students with language deficits.

Linguists point out that the language of lower class black students may be different, but there is no evidence that it is inferior (Hall & Turner, 1974). Are the disparities that exist (or are measured by standardized tests) between the performance of black students and white students attributable to language differences? Or, is this a problem of varied socioeconomic status, socialization differences, teacher training and/or teaching strategies?

It is only within the framework of school's socializaion functions that we can fully and properly understand the history of minority education in the United States. Ethnic and racial minorities came to schools with different

languages, cultures, traditions and values (Mohl, 1981). This is a factor which influences or should influence teachers' class structure and instructional strategies. Teachers need to be knowledgeable of the uniqueness of the students they instruct. They need to know their students' abilities and inabilities.

Various other explanations have been given for the difficulties that black students experience in academic areas. These include family influences and the ways minority groups have been treated by majority groups. Cummings (1977) stated that learning difficulties among black students are brought about by a breakdown of the socialization process in the home. Black students who feel that they have power over their own strivings, achievements and successes will do well; black students who do not will pattern their achievement orientation and behaviors accordingly.

Ogbu (1985), an anthropologist, explained that the fact that Blacks and other minorities have a more difficult time learning is due in part to continuous cultural and language conflicts and differences. Such differences and resulting academic difficulties occur because of the way the society treats the minorities and the way the minorities themselves respond to their treatment (Ogbu, 1985). The lives of certain minorities are characterized by forced incorporation, forced subordination, and denial of access to quality education and job discrimination.

As a result of such treatment, black students develop

distrust of schools and school personnel. Such distrust may cause black students and other minorities difficulty in performing according to what is expected even if he or she is linquistically and cognitively capable. These causes and influences should be noted and given thought by all persons, especially classroom teachers, who have direct contact with minority students. They provide valuable information that could help teachers evaluate needs in order to work toward improving the performance of black students. Classroom teachers should be cognizant of these factors as possible explanations of the hostility they may encounter from black students and the students' refusal or inconsistency in completing classroom assignments.

Blacks in general continue to score below the national norms on standardized tests (Shields, 1979). One theory which attempts to explain black students' apparent slow progress in learning to read is that black English, spoken by many black students, is drastically different from the Standard English spoken by teachers and used in textbooks (Shields, 1979). Factors which also affect black students' performance in reading include their attitude, motivation, the existing teacher-pupil relationships, the distribution of teacher time and the teacher's evaluation of the students' progress (Batty & Batty, 1985).

Hall and Turner (1974) reviewed the hypothesis that Negro Nonstandard English dialect seriously impairs the performance of lower-class black students in public schools.

More specifically, do black students have a difficult time comprehending their teacher who speaks Standard English or vice versa? The researchers concluded that it is not necessary to teach English as a second language to Negro Nonstandard English speaking students. Black students, as do white students and other minorities, enter school and bring with them the language of the culture to which they have been exposed most predominantly.

The main issue that faces their teachers is determining to what extent their student's language will aid or hinder their success in school. Because standard English pervades schools, textbooks, all students, black students included, need to learn the language that will be most conducive toward them achieving success in school. More effort should be directed toward studying universals of cognitive development rather than toward relatively superficial performance differences such as spoken dialects (Hall & Turner, 1974). Based upon their research, Hall and Turner (1974) recommended that the focus of instruction for black students be cognitive and intellectual in nature.

Various researchers have given consideration to the idea of training and teaching thinking skills. The umbrella term used to describe emphasis on directly enriching cognitive and intellectual abilities is metacognition. This term has been defined and described in various ways:

> Metacognition is knowledge and cognition about cognitive phenomena (Flavell, 1979).

Metacognition is the area of students' self-monitoring and knowledge about cogniton (Copple et al, 1982).

Metacognition refers to the ability to monitor one's own cognition; it is thinking about thinking (Babb's & Moe, 1983).

Metacognition is knowledge and control the student has over his or her own thinking and learning activities, including reading (Baker & Brown, 1984).

Metacognition is the ability of learners to know how they know and to regulate the learning process consciously (Spring, 1985).

Metacognition, broadly speaking, is identified as that body of knowledge and understanding that reflects on cognition itself. Put another way, metacognition is that mental activity for which other mental states or processes become the object of reflection (Yussen, 1985).

Metacognition is taking place when students are aware of the strategies they are using in their own

learning and thinking (Hammand, 1986).

What one may surmise from the various cited definitions of metacognition are the characteristics they all have in common. Central to most views on metacognition is an emphasis on an awareness of one's own cognitive skills and abilities and the efficient use of this self-awareness to self-regulate cognitive activity (Loper & Murphy, 1985). This ability is so crucial to black students' success because of its emphasis on students' self-awareness and self-regulation of their comprehension. In order to perform at a standard level or above, black students must be able to absorb the information they read or that is presented to them in class. If black students are conscious of their academic strengths and weaknesses, as metacognitive training seeks to ensure, they will be able to perform as necessary to increase their success with whatever tasks are before them--whether these tasks are classroom assignments, teacher-made informal tests, standardized achievement tests or intelligence tests.

It has been concluded that metacognition plays an important role in oral communication of information, oral persuasion, attention, oral comprehension, memory, problem solving, reading comprehension, writing, language acquisition, social cognition, self-control and self-instruction (Flavell, 1979). All of these areas aid students' daily performance in academic tasks and their subsequent performance on standardized tests.

Wagner & Sternberg (1984) reported that there are four

areas of metacognitive performance which cause students problems. They are: task difficulty, comprehension monitoring, study-time apportionment and predicting one's own performance. Since metacognition involves a higher order of intellectual functioning, there is support for using a systematic cognitive skills training program to formulate and enhance these high level skills in black students.

Recent information-processing research has implied that it is advisable to teach metacognitive as well as cognitive skills in a skills-instructional curriculum. The importance of considering metacognitive performance when one's purpose is to develop knowledge and knowledge-based skills is evidenced by the fact that students, specifically young students, are not very adept at monitoring what they do when learning (Wagner & Sternberg, 1984). Teaching metacognitive skills will help students to monitor their learning and will result in their increased productivity and increased performance on standardized tests.

One skills training format is a task analysis instructional sequence for teaching metacognitive skills for test taking. It was developed by Babbs and Moe (1983). As part of this training program, students are encouraged to consider these steps when reading:

1. Think about thinking.
2. Know the crucial (desired) goal.
3. Plan ways to accomplish that goal.
4. Check to see whether the goal is met.

5. Take action when the goal is not met.

The teacher/trainer explains goals, demonstrates effective cognitive procedures, asks questions to encourage student analysis, and role plays to help the students consider the above stated steps when reading. In sum, the treatment sessions focus on thoughts, goal setting, planning, assessment and follow-up.

Another way to develop students' metacognitive skills when they are reading is to talk with them about the techniques the writer used to affect their thinking. They should be asked such questions as:

"What were you thinking when you read this part of the story?"

"What made you change your mind?"

"What words did the author use to make you feel that way?"

"What did you learn from this story?"

The teacher/trainer should talk to students about what they do when a part of what they are reading does not make sense or when they come to a word they do not know (Hammond, 1986). The major focus of instruction in metacognition is to teach students to use knowledge about the reading task independently to plan, regulate and monitor their reading/thinking activities independently (Babbs & Moe, 1983).

The research of Manning and Manning (1984) identified differences between early readers and nonreaders from low

socioeconomic levels by comparing demographic and familial patterns. This research is pertinent in considering the foundations upon which acquisition of reading skills develop and the development of metacognitive skills. In this study, interviews were conducted with parents of twenty students. It was revealed that traits associated with readers from low socioeconomic backgrounds are similar to traits associated with early readers from higher socioeconomic levels. The following traits were summary information associated with early readers from low socioeconomic homes. The students:

1. prefer quiet games;
2. enjoy playing alone;
3. prefer educational television programs to cartoons;
4. have parents who read for pleasure;
5. check out books from the library;
6. have parents who believe they should help them with reading (Manning & Manning, 1984).

The authors pointed out that these traits should be of interest to teachers, parents and researchers. The fact that early readers "enjoy playing alone" indicates that they possess some self-direction. This factor could be used as a foundation or basis for teaching metacognitive skills.

Students should receive training to enhance their metacognitive abilities as early as possible. Young students read by decoding and older students read for meaning (Baker & Brown, 1984). Metacognition involves students' knowledge

about their specific, individual cognitive resources and indicates the necessity of comprehension monitoring. Comprehension monitoring occurs when students realize they have failed in comprehending and then know what to do about the deficit (Baker & Brown, 1984). Effective comprehension monitoring may depend upon a students' age and the nature of the materials being used. It is easier when the students involved have been informed of errors or inconsistencies in reading materials. Baker and Brown (1984) stated that students should be taught to evaluate what they are reading. Their findings too support the value of metacognitive strategies instruction.

As mentioned earlier, standardized testing is used to make decisions which direct the course of most students' academic careers and occupations. The results of standardized test are used to determine who passes from one grade to the next, who is admitted to a special program, who enters college, who is accepted into graduate school, and who is promoted on the job. There are several kinds of standardized tests; these include intelligence tests, aptitude tests, and achievement tests. Intelligence tests measure analytical and general thinking skills. Examples of intelligence tests include the Stanford-Binet Intelligence, the Wechsler Intelligence Scale for Children, the Wechsler Adult Intelligence Scale and the Otis-Lennon School Ability Test (Anastasi, 1982). Aptitude tests measure mental functioning in various subjects. Examples of aptitude tests

include the Differential Aptitude Tests, and the Chicago Tests of Primary Mental Abilities. Achievement tests are used to measure skills and information taught in the average American classroom. The Illinois Test of Basic Skills, the California Achievement Tests and the Metropolitan Achievement Tests are examples of achievement tests. When the question of racial differences on standardized tests arises, the tests in question are most often intelligence tests. The dispute over whether or not standardized tests discriminate against minorities has been a debated issue since the early 1970's (Biemiller, 1984).

What is the purpose of intelligence tests? Intelligence tests should help us understand the causes of a given person's good or poor grades or predict what a student will do in the future in radically changed circumstances (Cattell, 1970). There is question as to whether intelligence tests are actually used for this purpose. Cultural differences can be a problem, as can test interpretaion, when standarized test norms put minority students at an unfair disadvantage. According to Copple et al. (1982), the intellegence test was validated by the determination that it was predictive of school success; this process was consistent with Binet's purpose in developing such a test.

Research into the mean intelligence of ethnic and cultural groups has revealed broad differences in mental ability. Such findings from intelligence tests have resulted in charges of cultural bias in intelligence tests by both

educators and the public at large (Muir, 1982). Issues concerning intelligence testing and special ability testing of ethnic minority group students are complex because they are woven into the very fabric of society. Intelligence tests and other special ability tests should be viewed as measures of achievement (Sattler, 1982). Generally, Blacks, Hispanics and Native Americans on the average score about one standard deviation below Anglo- and Oriental Americans while Jews consistently outperform all other groups (Muir,1982). Muir's findings do not represent absolute, conclusive findings on these racial differences.

Testing is a multimillion dollar industry in the United States with group intelligence tests being used primarily in business and in schools (Muir, 1982). Test taking is a skill (Harris, 1980, p.20), and black students will undoubtedly profit from instruction designed to improve their test taking abilities. Metacognitive skills training is well suited for this purpose because such a framework increases emphasis on students' responsibility for acquiring knowledge that could assist them with taking a test.

Cattell (1970) contended that there are two kinds of intelligence -- fluid and crystallized. Fluid intelligence is independent of culture. Crystallized general ability is characterized by judgmental skills acquired by cultural experience. These skills include: a well equipped memory, vocabulary, good use of synonyms, numerical skills, mechanical knowledge and habits of logical reasoning. Fluid

intelligence and crystallized intelligence contrast in one area -- mechanical ability. Students with a high level of crystallized intelligence have different capacities that they acquired because they have the fluid intelligence to see problem situations. Fluid and crystallized intelligence are positively correlated (Cattell, 1970, p. 113). Crystallized ability is not synonymous with scholastic achievement, at least according to Cattell.

By definition, fluid ability tests are culture fair perceptual and performance tests and those specially developed tests of judgment and reasoning that are considered relatively culture free. Tests of classifications, matrices, topology analogies, i.e., problems that do not involve extensive educational acquisition, are involved. Unlike crystallized intelligence, fluid intelligence is not related to what is taught in schools (Cattell, 1970). Culture fair tests, according to Cattell, need to be used to open equal educational opportunity to all our subcultures of class and race.

The Piagetian view of intelligence proposed that there are two interrelated aspects of intelligence --its function and its structure. Underlying Piaget's theorized description of students' intellectual development are assumptions about the nature of the developmental process. He postulated that maturation, experience of the physical environment, the influence of the social environment, and equilibration are the factors that interact and bring about students' cognitive

development. Equilibration, which is the students' own self-regulatory processes, coordinates and guides maturation, experience of the physical environment and the influence of the social environment (Wagner & Sternberg, 1984). Metacognition, as does Piaget's theory of intellectual skills, involves self-regulating machanisms. During problem-solving, the metacognitive tasks used are checking, planning, monitoring, testing, revising and evaluating (Baker & Brown, 1984). Black students need to be skillful in these tasks in order to develop proficiency in problem-solving, completing academic assignments and test taking.

The need to increase students' productivity in school is not a question often debated. Educators continuously seek ways to improve each component of schooling and instruction. One goal of academic instruction is to ensure that students are acquiring new information that will assist them in developing individual skills maximally in order to experience success while receiving formal schooling and eventually make positive contributions to society. The present paper has presented one approach which can be used as an intellectual enrichment strategy toward that end. Strength in metacognition may lead to the attainment of other abilities necessary for improved performance and success. When black students learn to efficiently monitor their strengths and weaknesses, a firm foundation for future learning is laid.

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